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Newfoundland and Labrador Region

Status of Atlantic Salmon (*Salmo salar* L.) stocks within the Newfoundland and Labrador Region (Salmon Fishing Areas 1-14B), 2014

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Foreword

This series documents the scientific basis for the evaluation of aquatic resources and ecosystems in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

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ABSTRACT

In 2014, Atlantic Salmon populations were monitored on 14 rivers in Newfoundland and Labrador (NL; Salmon Fishing Areas [SFAs] 1–14B). Returns of small and large salmon decreased compared to the previous generation mean on three of the four (75%) assessed rivers in Labrador and five of 10 (50%) rivers in Newfoundland. Conservation egg requirements were not achieved on three of the four (75%) monitored rivers in Labrador and five of the 10 (50%) rivers in Newfoundland. Atlantic Salmon harvests in 2014 were 12,944 salmon in the subsistence/Food, Social, and Ceremonial (FSC) fisheries, and 24,120 retained salmon (plus 25,001 released salmon) in the recreational fishery. Salmon returns to NL rivers have increased since the moratorium on commercial salmon fisheries, with the exception of some rivers on Newfoundland's south coast. In general, annual returns of salmon are highly variable and populations on the south coast continue to decline. Marine smolt survival is considered to be a major factor limiting the abundance of Atlantic Salmon within the region.

État du stock de saumon atlantique (*Salmo salar L.*) dans la Région de Terre-Neuve-et-Labrador (zones de pêche du saumon 1-14B), 2014

RÉSUMÉ

En 2014, la population du saumon de l'Atlantique a été surveillée dans 14 rivières à Terre-Neuve-et-Labrador (T.-N.-L.; zones de pêche du saumon [ZPS] 1–14B). Les retours des petits et des grands saumons ont diminué par rapport à la moyenne de la génération précédente dans trois des quatre (75 %) rivières évaluées au Labrador et dans cinq des 10 (50 %) rivières évaluées à Terre-Neuve. Les exigences de ponte pour la conservation n'ont pas été respectées dans trois des quatre (75 %) rivières surveillées au Labrador et dans cinq des 10 (50 %) rivières surveillées à Terre-Neuve. En 2014, 12 944 saumons de l'Atlantique ont été pêchés à des fins de subsistance/alimentaires, sociales et rituelles (ASR), et 24 120 saumons ont été conservés (plus de 25 001 saumons ont été remis à l'eau) dans le cadre de la pêche récréative. Les retours de saumons à T.-N.-L. ont augmenté depuis le moratoire sur la pêche commerciale du saumon, à l'exception de certaines rivières sur la côte sud de Terre-Neuve. En général, les retours annuels de saumons varient énormément et les populations sur la côte sud continuent à diminuer. La survie des saumoneaux en mer est considérée comme un facteur important qui limite l'abondance du saumon de l'Atlantique dans la région.

INTRODUCTION

The stock assessment of Atlantic Salmon (*Salmo salar*) in the Newfoundland and Labrador (NL) Region is conducted every five years, with the most recent assessment completed in 2013 (DFO 2015a). An annual update of the stock status is prepared in interim years to provide information to DFO Fisheries Management and the general public. Indicators of adult and juvenile (smolt) Atlantic Salmon stocks are derived from data collected at monitoring facilities and fisheries catch statistics, which are summarized in an annual report (DFO 2015b).

There are 15 Atlantic Salmon management areas, known as Salmon Fishing Areas (SFAs) 1-14B, in NL (Figure 1). Within these areas there are 394 rivers known to contain wild Atlantic Salmon populations (Reddin et al. 2010) that are characterized by differences in life history traits, including freshwater residence time, age at first spawning, and the extent of ocean migration. Spawning populations consist of varying proportions of small (fork length [FL] < 63 cm) and large (FL ≥ 63 cm) salmon. The majority of rivers in Newfoundland (SFAs 3-12) contain populations of small salmon, which are predominantly maiden fish (never spawned before) that have spent one-year at sea before returning to spawn (grilse, one-sea-winter, [1SW]). The large salmon component in this area consists mainly of repeat spawners (repeat-spawning grilse) which are returning for a second or subsequent spawning. In Labrador (SFAs 1, 2 and 14B) and Western Newfoundland (SFAs 13 and 14A), there are important large salmon components that contain maiden fish which have spent two (two-sea-winter [2SW]) or more years (multi-sea-winter [MSW]) at sea before spawning.

There has been no commercial salmon fishing in insular Newfoundland (SFAs 3-14A) since 1992, the Straits area of Labrador (SFA 14B) since 1997, and the rest of Labrador (SFAs 1-2) since 1998. Atlantic Salmon fisheries in the NL Region are currently recreational and subsistence (Food, Social and Ceremonial [FSC], and resident). Details regarding historical fishery management changes to salmon fisheries in the NL Region can be found in Bourgeois et al. (2012).

METHODS

The 2014 status of Atlantic Salmon stocks within NL (SFAs 1–14B) was assessed using data collected from various salmon monitoring facilities (counting fences and fishways) (Figure 1) and the recreational fishery. The Licence Stub Return System (O'Connell et al. 1996a, 1998) provided recreational catch and effort data for SFAs 2-14B, except for Eagle River and Sand Hill River in SFA 2 where data from private fishing camps were used. DFO Conservation and Protection (C&P) staff and fishing camp operator logs provided recreational fishery data for SFA 1.

The total returns of small and large Atlantic Salmon to monitored rivers were reported and include fishery removals below the monitoring facility. Smolts were assessed at four rivers using a counting fence (Campbellton River, Rocky River, and Western Arm Brook) or mark-recapture method (Conne River) (Dempson and Stansbury 1991; Schwarz and Dempson 1994).

Conservation egg requirements for Atlantic Salmon have been established for individual rivers in Labrador (SFAs 1-2) based on 1.9 eggs per m^2 of river rearing habitat, and in Newfoundland (SFAs 3-13) based on 2.4 eggs per m^2 of river rearing habitat and 368 eggs per hectare of lake habitat, and the Straits Area of Labrador (SFAs 14A-14B) based on 2.4 eggs per m^2 of river rearing habitat and 105 eggs per hectare of lake habitat (O'Connell and Dempson 1995; O'Connell et al. 1996b; O'Connell et al. 1997; Reddin et al. 2006).

Conservation egg requirements are considered to be limit reference points. The level to which egg depositions can fall below conservation before threatening the long term sustainability of the population needs to be determined. According to the Wild Atlantic Salmon Conservation Policy (DFO 2009), at some level below conservation, "*the population is at a level of abundance at which further mortalities will lead to continued decline in the spawner abundance and an increasing risk of serious harm.*" Atlantic Salmon stock status is currently assessed based on the proportion of the conservation egg requirement achieved in a given year and trends in abundance of various life stages. Comparisons are generally made to a long-term mean (moratorium years of the commercial salmon fishery) as well as the previous five year mean for Newfoundland and six year mean for Labrador, which correspond to the average Atlantic Salmon generation time in those areas, respectively.

In addition to examining salmon stock abundance in individual rivers, stocks from all monitored rivers were combined to derive composite indices of abundance for NL. These indices provide an overall perspective of trends in Atlantic Salmon abundance for the region. Trends in abundance were analyzed by fitting general linear models (GLM) separately to log transformed total returns of small and large salmon. Data were transformed to provide a standardized metric of relative changes in individual stock sizes. Therefore the unit for the abundance index is not an absolute abundance, but is related to a geometric mean of individual river abundances. Details of the methodology used for the composite index are summarized in Dempson et al. (2004). Newfoundland index values for the pre-moratorium period 1984-91 were adjusted to account for marine exploitation. In all cases, marine exploitation rates used were the average of the median values obtained from nine rivers as described in Dempson et al. (2001) and were 45.3% for small salmon and 74.2% for large salmon.

RESULTS AND DISCUSSION

RECREATIONAL FISHERY DATA

Recreational fishery data are presented for the period 1994–2014 (Figures 2 and 3; Tables 1 and 2). Fishing effort is presented as rod days, defined as any day or part of a day in which an angler fished. Retained catch as well as the number of salmon caught and released are presented separately for NL. Catch per unit effort (CPUE) was calculated using total catch (retained plus released fish).

Labrador (SFAs 1, 2 and14B)

The number of small salmon retained in the recreational fishery in Labrador in 2014 was estimated at 1,529. This is similar to the previous six year mean of 1,527. There has been a significant (r^2=0.85, p-value < 0.05) declining trend in the number of small salmon being retained in Labrador over the time series. The number of caught and released small salmon in the recreational fishery in Labrador in 2014 was estimated at 6,289, which is above the previous six year mean of 5,998 (14% increase). However, there is no evidence of an increasing trend in caught and released salmon in Labrador. Retention of large salmon ceased in the Labrador recreational fishery in 2011 and therefore no retention of large salmon was reported for Labrador in 2014. Estimates of the number of released large salmon in Labrador has fluctuated widely over the past five years with an estimate of 1,607 in 2014, which is similar to the previous six year mean of 1,583 fish. Effort in the Labrador recreational salmon fishery reached a series low in 2012, but has since rebounded with 2014 producing an average year of effort (7,504 rod days). Catch per unit effort has been increasing in Labrador over the time series with anglers averaging over one fish per rod day in each of the past five years.

Newfoundland (SFAs 3-14A)

The retention of small salmon in the recreational fishery in Newfoundland in 2014 was estimated at 22,591, which was 9% lower than the previous five year mean of 24,827 fish. The number of released small salmon in 2014 was 14,853, which was 34% lower than the previous five year mean of 22,392 fish and continues the trend of declining numbers of released fish that started in 2010. Retention of large salmon has not been permitted in Newfoundland for the entire time series. Estimates of the number of released large salmon have fluctuated widely over the time series ranging from 3,014 to 5,886. Total number of released large salmon in 2014 was estimated at 3,781, which was below the previous five year mean of 4,319 salmon. Effort in Newfoundland in 2014 was similar to the series mean but was below the previous five year mean. Catch per unit effort in Newfoundland in 2014 was the fourth lowest in the series (0.37) and below the previous five year mean. It is worth noting that angling catches have shown steep declines in SFA 11. Retained, released, and total catch (retained + released) have fallen by 73%, 60%, and 66%, respectively over the 1994–2014 period.

Recreational Salmon Fishery Licences

Total recreational licence sales in NL in 2014 were estimated to be 23,169 (Figure 4), which was the second highest in the time series. Licence sales have been increasing since a low in 2007 which coincided with poor adult salmon returns to rivers in the region.

ABORIGINAL/SUBSISTENCE FISHERY DATA

Aboriginal FSC fisheries for Atlantic Salmon occur in Labrador under communal licences. Labrador also has a resident subsistence fishery for trout and char with a permitted retention of salmon by-catch (three salmon since 2011). In Newfoundland, Miawpukek First Nations (MFN) hold a FSC communal salmon fishing licence, but have chosen not to harvest salmon under this licence since 1997 due to conservation concerns.

Labrador FSC and subsistence fisheries harvested approximately 12,944 salmon (32 t) in 2014, which was similar to the previous generation mean (2008–13) of 13,772 salmon (37 t) (Table 3 and Figure 5). Large salmon represented 31% of the catch by number (3,991) and 46% (15 t) by weight.

MONITORING FACILITIES - TOTAL RETURNS AND CONSERVATION REQUIREMENTS

Labrador (SFAs 1, 2 and 14B)

Northern Labrador (SFA 1)

Total Returns (Tables 4 and 5, Figure 6): Information on total returns of small and large salmon in 2014 was available for one Northern Labrador river: English River (SFA 1). Returns of small and large salmon were the highest in the time series (1999–2014) in 2014 and above both the previous six year and moratorium means since 2011.

Conservation Requirement (Table 6a, Figure 11): English River achieved 275% of its conservation requirement in 2014, the highest in the time series (1999–2014), and achieved conservation in five of the previous six years.

Southern Labrador (SFA 2 and 14B)

Total Returns (Tables 4 and 5, Figure 6)

Information on total returns of small and large salmon in 2014 was available for three SFA 2 rivers in Southern Labrador (Southwest Brook, Muddy Bay Brook and Sand Hill River). The 2014 returns of small salmon were below the previous six year and moratorium means for all SFA 2 monitored rivers. Returns of large salmon in 2014 were also below the previous six year and moratorium means for Muddy Bay Brook and Sand Hill River, but were higher for Southwest Brook (Paradise River).

Conservation Requirement (Table 6a, Figure 11)

The three assessed rivers in SFA 2 did not achieve conservation in 2014; Southwest Brook 72%, Muddy Bay Brook 66% and Sand Hill River 59%.

Newfoundland (SFAs 3–14A)

Northeast Coast (SFAs 3–8)

Total Returns (Tables 4 and 5, Figures 7 and 8)

Information on total returns of small and large salmon in 2014 was available for four Northeast Coast rivers: Exploits River (SFA 4), Campbellton River (SFA 4), Middle Brook (SFA 5) and Terra Nova River (SFA 5). Returns to Salmon Brook (Gander River) were available to 2013. The 2014 returns of small salmon were below, or similar to, the previous five year mean for assessed Northeast Coast rivers, except for Middle Brook where returns were higher. However, small salmon returns in 2014 remained above the moratorium means. The 2014 returns of large salmon were above, or similar to, the previous five year and moratorium means for assessed rivers in SFAs 3–8, except for Exploits River where large returns were the lowest since 2005 and similar to the moratorium mean. Returns in 2013 to Salmon Brook were above the previous five year and moratorium means for small salmon, but below for large salmon.

Conservation Requirement (Table 6b, Figure 11)

Two of the four assessed Northeast Coast rivers achieved conservation in 2014, Campbellton River (409%) and Middle Brook (363%). The Exploits River (50%) and Terra Nova River (61%) did not achieve conservation in 2014. The Exploits River was also assessed in three sections:

1. Lower - Below Grand Falls 18%;
2. Middle – between Grand Falls and Red Indian Lake 69%; and
3. Upper – above Red Indian Lake 9%.

Although there is no information available for Salmon Brook (Gander River) in 2014, it did achieve conservation in 2013 (184%).

South Coast (SFAs 9–11)

Total Returns (Tables 4 and 5, Figure 9)

Information on total returns of small and large salmon in 2014 was available for three South Coast rivers: Rocky River (SFA 9), Little River (SFA 11) and Conne River (SFA 11). Total returns of small salmon to Rocky River declined from a record high of 941 fish in 2010 to 212 in 2013 with 367 small salmon returning in 2014. The latter was 36% below the previous five year mean. Returns of large salmon totaled 41, but were 24% higher than the recent five year mean. Total returns of small salmon to Conne River in 2014 were 37% below the previous five year mean and were the second lowest on record and hence well below the peak returns of the mid-

to late 1980s. Returns of large salmon were 29% lower than the previous five year mean and the second lowest during the past 10 years. Over a 29-year period (1986–2014) returns of small salmon at Conne River have declined by 74%, while numbers of large salmon have decreased by 80%. During the past 15 years (2000–14), small and large salmon have declined by 45% and 62%, respectively. A retrospective analysis was previously carried out to infer a plausible range of returns to Conne River during the 10-year period prior to 1986 (1976–85) (Robertson et al. 2013). Results from this analysis indicated that the number of salmon returning to Conne River had likely been similar to the range of returns observed at the fish counting facility during the first five years of operation (1986–90), providing further support that the salmon population has indeed declined dramatically since the early 1990s.

In addition to wild salmon, there were 14 escaped farmed salmon captured at the mouth of Conne River in the spring of 2014. These fish had an average fork length of 75.5 cm (range: 65-82 cm).

A similar, but more substantive decline occurred at Little River in 2014 where returns of small salmon decreased by 77% relative to the fiveyear mean and were the second lowest recorded since counts began in 1987. For the first time there were no large salmon recorded. Since 1996, returns of small salmon at Little River have been correlated with counts of salmon returning to Conne (r^2=0.656; P < 0.001). Over the past 19 years (1996–2014), returns of small and large salmon have declined by 84% and 99%, respectively.

Conservation Requirement (Table 6, Figure 11)

The percent conservation requirement achieved for Rocky River reached a record high of 96% in 2010, but declined to 42% in 2014. Little River decreased from 169% in 2013 to only 21% of the conservation requirement in 2014. Little River has met conservation twice since 2004 (2010 and 2013). Percent conservation requirement achieved for Conne River declined from 101% in 2013 to 49% in 2014, which was the lowest ever recorded. Although there is no information available for Northeast Brook (Trepassey) in 2014, it did achieve conservation in 2013 (148%). A population viability analysis (Robertson et al. 2013) noted that under current conditions there was a low probability (< 30%) that Atlantic Salmon populations in south Newfoundland would meet or exceed conservation spawning requirements over the next 15 years. To date, management measures remain the same with no additional measures taken to rebuild populations.

Southwest Coast (SFAs 12–13)

Total Returns (Tables 4 and 5, Figure 10)

Information on total returns of small and large salmon in 2014 was available for one Southwest Coast river: Harry's River (SFA 13). Returns to Harry's River were estimated using a variety of methods from 1992–2010 (Bourgeois et al. 2012). Since 2011, returns were derived from a sonar operation conducted near the mouth of the river. Returns of both small and large salmon to Harry's River in 2014 were greater than the previous five year and moratorium means.

Conservation Requirement (Table 6b, Figure 11)

Harry's River achieved the highest conservation requirement on record in 2014 (137%).

Northwest Coast (SFA 14A)

Total Returns (Tables 4 and 5, Figure 10)

Information on total returns of small and large salmon in 2014 was available for two Northwest Coast rivers (SFA 14A): Torrent River and Western Arm Brook. The return of small salmon was

greater than or similar to the previous five year and moratorium means for both SFA 14A rivers in 2014, while returns of large salmon were below these means.

Conservation Requirement (Table 6b, Figure 11)

The conservation requirement was achieved on both Torrent River (714%) and Western Arm Brook (510%) in 2014.

Abundance Index

An index of relative abundance for small and large salmon was calculated based on information from 10 monitored rivers in Newfoundland (Figure 12), as described in Dempson et al. (2004), and four rivers in Labrador (Figure 13).

The Newfoundland index continues to fluctuate and has generally remained lower than pre-moratorium levels (1984–91), where adjustments to correct for marine exploitation were also made. Following the lowest abundance recorded in 2007, returns of small salmon increased to 2010 but have since declined such that returns for 2012-14 were below the previous five year and pre-moratorium means when adjusted for marine exploitation (Figure 12). Following the closure of the commercial Atlantic Salmon fishery in 1992, returns of large salmon increased annually, peaking in 1998 (Figure 12) but then declined until 2003. Since 2003, the relative abundance of large Atlantic Salmon has been variable with returns in 2014 well below 2013 and less than the previous five year mean. By comparison with small Atlantic Salmon, the index of large salmon abundance continues to remain above the pre-moratorium period, but fluctuates without any consistent improvement over the past 15 years. Since most large salmon in Newfoundland are repeat spawners, this also implies that repeat spawner survival remains low, and variable.

Atlantic Salmon have been monitored at four Labrador rivers since 2002 (three in 2010 and 2012). Returns of small salmon in Labrador have been variable, with no consistent trend. The Labrador index for small salmon in 2014 was below the previous generation mean. Following the lowest abundance of large salmon in Labrador in 2010, returns of large salmon increased to the highest on record in 2012 and remained above the previous generation mean in 2014 (Figure 13).

SMOLT PRODUCTION AND MARINE SURVIVAL

In 2014, smolts were enumerated at four rivers in Newfoundland: Campbellton River (SFA 4), Rocky River (SFA 9), Conne River (SFA 11), and Western Arm Brook (SFA 14A). Monitoring of smolt and adult Atlantic Salmon was discontinued at Northeast Brook (Trepassey) (SFA 9) beginning in 2014. In general, smolt numbers in 2014 were similar to the previous five year means (2009–13) at Conne River and Rocky River, but 8% to 14% greater at Western Arm Brook and Campbellton River, respectively (Table 7, Figure 14).

Marine survival at Conne River (1.9%) was 45% less than the previous five year mean (2009-13). In 2014, survival rates at Campbellton River and Western Arm Brook were similar to the previous five year mean, while Rocky River was 15% greater (Figure 15). Marine survival rates at the two South Coast monitored rivers continue to be well below those from the Northeast and Northwest Coast rivers (Table 8, Figure 15).

SUMMARY AND CONCLUSIONS

Returns of small and large salmon in 2014 decreased compared to the previous generation mean on three of the four (75%) assessed rivers in Labrador (75%) and five of 10 (50%) rivers in Newfoundland.

In 2014, three of the four (75%) monitored rivers in Labrador and five of the 10 (50%) rivers in Newfoundland did not achieve conservation egg requirements.

Marine smolt survival is considered to be a major factor limiting the abundance of Atlantic Salmon within the NL Region. Smolt to adult survival of the 2014 smolt class ranged from 1.9% for Conne River to 10.0% for Campbellton River.

In 2014, Atlantic Salmon harvests in 2014 were estimated at 12,944 salmon in the subsistence/FSC fisheries and 24,120 retained salmon (plus 27,275 released) in the recreational fishery.

SOURCES OF UNCERTAINTY

No current assessments are available on salmon populations in SFAs 3, 6, 7, 10, 12 and 14B as well as the Lake Melville area of SFA 1.

Salmon populations in assessed rivers may be unique and not representative of other rivers within the SFA.

Historical or estimated biological characteristic data (e.g. fecundity, sex ratio, female size) and extrapolated catch data used in the assessment process adds uncertainty in the conservation egg requirement values.

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TABLES

Table 1. Atlantic Salmon recreational fishery catch and effort data for Labrador (SFAs 1, 2, and 14B), 1994–2014.

Year	Effort (Rod Days)	Small Ret.	Small Rel.	Small Total	Large Ret.	Large Rel.	Large Total	Total Ret.	Total Rel.	Total	CPUE
1994	8,449	2,549	3,681	6,230	455	347	802	3,004	4,028	7,032	0.83
1995	7,719	2,493	3,302	5,795	408	508	916	2,901	3,810	6,711	0.87
1996	9,193	2,565	3,776	6,341	334	489	823	2,899	4,265	7,164	0.78
1997	8,394	2,365	2,187	4,552	158	566	724	2,523	2,753	5,276	0.63
1998	8,288	2,131	3,758	5,889	231	814	1,045	2,362	4,572	6,934	0.84
1999	7,592	2,076	4,407	6,483	320	931	1,251	2,396	5,338	7,734	1.02
2000	10,645	2,561	7,095	9,656	262	1,446	1,708	2,823	8,541	11,364	1.07
2001	7,986	2,049	4,640	6,689	338	1,468	1,806	2,387	6,108	8,495	1.06
2002	8,751	2,071	5,052	7,123	207	978	1,185	2,278	6,030	8,308	0.95
2003	8,053	2,112	4,924	7,036	222	1,326	1,548	2,334	6,250	8,584	1.07
2004	8,302	1,808	5,968	7,776	259	1,519	1,778	2,067	7,487	9,554	1.15
2005	8,499	2,007	7,120	9,127	291	1,290	1,581	2,298	8,410	10,708	1.26
2006	6,743	1,656	5,815	7,471	227	1,133	1,360	1,883	6,948	8,831	1.31
2007	7,930	1,762	4,631	6,393	235	1,222	1,457	1,997	5,853	7,850	0.99
2008	9,025	1,936	5,917	7,853	200	1,461	1,661	2,136	7,378	9,514	1.05
2009	7,466	1,355	3,396	4,751	216	1,219	1,435	1,571	4,615	6,186	0.83
2010	6,560	1,477	4,704	6,181	197	1,080	1,277	1,674	5,784	7,458	1.14
2011	5,457	1,628	5,340	6,968	*	2,233	2,233	1,628	7,573	9,201	1.69
2012	4,952	1,376	3,302	4,678	*	1,072	1,072	1,376	4,374	5,750	1.16
2013	5,978	1,389	4,167	5,556	*	2,433	2,433	1,389	6,600	7,989	1.34
2014	7,504	1,529	4,760	6,289	*	1,607	1,607	1,529	6,367	7,896	1.05
2008-2013 mean	6,573	1,527	4,471	5,998	*	1,583	1,685	1,629	6,054	7,683	1.17
95% CL	1,559	235	1,102	1,320	*	631	568	291	1,433	1,611	0.29

Small (<63 cm) and Large (≥63 cm) salmon
Salmon retained (Ret.), released (Rel.) and catch per unit effort [CPUE = (Total Ret. + Total Rel.)/Effort]
* Retention of large salmon was not permitted as per regulations

Table 2. Atlantic Salmon recreational fishery catch and effort data for Newfoundland (SFAs 3–14A), 1994–2014.

Year	Effort (Rod Days)	Small Ret.	Small Rel.	Small Total	Large Ret.	Large Rel.	Large Total	Total Ret.	Total Rel.	Total	CPUE
1994	132,935	29,225	20,761	49,986	*	4,685	4,685	29,225	25,446	54,671	0.41
1995	128,309	30,512	22,971	53,483	*	4,658	4,658	30,512	27,629	58,141	0.45
1996	153,759	35,440	30,566	66,006	*	5,720	5,720	35,440	36,286	71,726	0.47
1997	123,165	22,819	23,129	45,948	*	4,154	4,154	22,819	27,283	50,102	0.41
1998	123,041	22,668	27,610	50,278	*	3,561	3,561	22,668	31,171	53,839	0.44
1999	123,840	22,870	20,160	43,030	*	3,222	3,222	22,870	23,382	46,252	0.37
2000	127,639	21,808	22,610	44,418	*	5,033	5,033	21,808	27,643	49,451	0.39
2001	102,768	20,977	17,708	38,685	*	3,716	3,716	20,977	21,424	42,401	0.41
2002	95,143	20,913	18,019	38,932	*	3,014	3,014	20,913	21,033	41,946	0.44
2003	94,862	21,226	16,455	37,681	*	3,639	3,639	21,226	20,094	41,320	0.44
2004	91,151	19,946	17,462	37,408	*	3,649	3,649	19,946	21,111	41,057	0.45
2005	117,114	21,869	26,009	47,878	*	5,308	5,308	21,869	31,317	53,186	0.45
2006	106,900	19,394	24,676	44,070	*	4,561	4,561	19,394	29,237	48,631	0.45
2007	87,655	14,577	13,088	27,665	*	3,385	3,385	14,577	16,473	31,050	0.35
2008	143,674	27,497	26,870	54,367	*	5,573	5,573	27,497	32,443	59,940	0.42
2009	137,465	23,103	23,285	46,388	*	3,053	3,053	23,103	26,338	49,441	0.36
2010	121,705	29,018	34,342	63,360	*	5,303	5,303	29,018	39,645	68,663	0.56
2011	111,494	27,116	20,900	48,016	*	5,886	5,886	27,116	26,786	53,902	0.48
2012	108,701	21,893	17,638	39,531	*	3,017	3,017	21,893	20,655	42,548	0.39
2013	128,370	23,004	15,795	38,799	*	4,337	4,337	23,004	20,132	43,136	0.34
2014	110,718	22,591	14,853	37,444	*	3,781	3,781	22,591	18,634	41,225	0.37
2009-2013 mean	121,547	24,827	22,392	47,219	*	4,319	4,319	24,827	26,711	51,538	0.42
95% CL	14,768	3,812	9,037	12,288	*	1,609	1,609	3,812	9,763	13,236	0.12

Small (<63 cm) and Large (≥63 cm) salmon
Salmon retained (Ret.), released (Rel.) and catch per unit effort [CPUE = (Total Ret. + Total Rel.)/Effort]
* Retention of large salmon was not permitted as per regulations

Table 3a. Harvests of Atlantic Salmon in the subsistence and FSC Fisheries in Labrador (SFA 1), 2000-14.

Year	Small Number	Small Weight (kg)	Large Number	Large Weight (kg)	Total Number	Total Weight (kg)
2000	4,111	8,111	1,092	4,364	5,203	12,475
2001	3,394	6,995	1,315	5,184	4,708	12,180
2002	3,609	7,386	1,015	4,441	4,624	11,827
2003	4,382	9,094	1,639	7,026	6,021	16,120
2004	4,822	10,038	2,210	8,656	7,032	18,694
2005	4,958	10,116	1,687	6,930	6,644	17,046
2006	5,422	11,189	1,639	6,330	7,061	17,519
2007	4,700	8,306	1,560	5,314	6,261	13,619
2008	5,144	10,325	2,944	13,572	8,088	23,896
2009	3,964	8,173	1,907	8,232	5,871	16,405
2010	6,227	13,116	2,689	11,351	8,916	24,468
2011	6,473	13,837	2,950	12,826	9,424	26,663
2012	5,731	10,611	3,153	14,096	8,883	24,707
2013	3,754	7,754	4,362	17,935	8,116	25,689
2014	5,291	10,659	2,965	11,155	8,256	21,814
2008-2013 mean	5,216	10,636	3,001	13,002	8,216	23,638

Table 3b. Harvests of Atlantic Salmon in the subsistence and FSC Fisheries in Labrador (SFA 2), 2000-14.

Year	Small Number	Small Weight (kg)	Large Number	Large Weight (kg)	Total Number	Total Weight (kg)
2000	1,212	2,242	260	897	1,472	3,139
2001	1,396	2,793	374	1,378	1,818	4,172
2002	2,197	4,196	422	1,549	2,571	5,745
2003	2,095	4,102	536	1,885	2,632	5,987
2004	3,564	7,341	1,486	5,512	5,050	12,852
2005	5,479	10,922	1,130	3,946	6,609	14,868
2006	4,955	10,008	1,451	5,193	6,406	15,201
2007	4,507	8,764	1,092	4,073	5,599	12,837
2008	4,694	9,071	961	3,373	5,656	12,444
2009	4,024	7,956	1,437	5,449	5,461	13,405
2010	3,929	7,828	1,151	4,160	5,080	11,988
2011	4,826	9,602	1,584	5,715	6,411	15,316
2012	4,237	8,110	1,066	3,699	5,303	11,809
2013	3,410	6,920	2,012	7,364	5,422	14,284
2014	3,662	6,891	1,026	3,692	4,688	10,583
2008-2013 mean	4,187	8,248	1,369	4,960	5,556	13,208

Table 3c. Harvests of Atlantic Salmon in the subsistence and FSC Fisheries in Labrador (SFA 1 and 2), 2000-14.

Year	Small Number	Small Weight (kg)	Large Number	Large Weight (kg)	Total Number	Total Weight (kg)
2000	5,323	10,353	1,352	5,261	6,675	15,614
2001	4,789	9,789	1,737	6,563	6,526	16,351
2002	5,806	11,581	1,389	5,990	7,195	17,572
2003	6,477	13,196	2,175	8,912	8,653	22,108
2004	8,385	17,379	3,696	14,167	12,081	31,546
2005	10,436	21,038	2,817	10,876	13,253	31,914
2006	10,377	21,198	3,090	11,523	13,467	32,721
2007	9,208	17,070	2,652	9,386	11,860	26,456
2008	9,838	19,396	3,905	16,944	13,743	36,340
2009	7,988	16,130	3,344	13,681	11,332	29,810
2010	10,156	20,945	3,840	15,511	13,996	36,456
2011	11,300	23,439	4,535	18,541	15,834	41,979
2012	9,968	18,721	4,219	17,795	14,186	36,516
2013	7,164	14,674	6,374	25,299	13,539	39,973
2014	8,953	17,550	3,991	14,847	12,944	32,397
2008-2013 mean	9,402	18,884	4,369	17,962	13,772	36,846

Table 4. Total returns of small Atlantic Salmon to rivers in NL 1984–2014.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1984	-	-	-	-	19,028	-	1,081	1,675	1,534	89	-	-	-	-	1,805	235
1985	-	-	-	-	17,555	-	1,663	1,283	2,012	124	-	-	-	-	1,621	470
1986	-	-	-	-	10,343	-	1,064	1,547	1,459	158	-	-	8,302	-	3,155	528
1987	-	-	-	-	9,481	-	493	1,053	1,404	91	80	64	10,155	-	2,647	437
1988	-	-	-	-	9,496	-	1,562	1,337	2,114	97	313	65	7,627	-	2,388	422
1989	-	-	-	-	7,577	-	596	626	1,377	62	168	102	4,968	-	1,510	455
1990	-	-	-	-	6,995	-	345	1,070	1,518	71	401	158	5,368	-	2,518	444
1991	-	-	-	-	5,659	-	245	763	1,127	99	211	55	2,411	-	1,590	233
1992	-	-	-	-	13,508	-	1,168	1,563	1,780	49	237	104	2,523	888	2,829	480
1993	-	-	-	-	22,253	4,001	1,560	2,247	3,050	79	292	169	2,703	1,808	4,215	947
1994	-	-	-	2,180	17,603	2,857	968	1,751	1,809	99	158	73	1,533	1,791	3,737	954
1995	-	-	-	2,796	16,226	3,035	1,600	1,390	2,515	80	385	118	3,502	2,213	6,346	823
1996	-	-	-	3,319	30,425	3,208	946	2,044	2,251	73	356	674	4,440	1,798	7,475	1,230
1997	-	-	-	-	15,263	1,975	465	1,352	1,732	50	435	399	3,200	1,747	4,158	509
1998	-	110	-	-	27,093	3,275	1,295	2,625	1,868	91	423	264	2,931	1,659	5,388	1,718
1999	59	331	-	-	28,802	3,076	1,105	1,948	1,892	95	327	307	2,358	1,713	4,857	1,046
2000	367	-	-	-	12,063	1,798	742	1,749	1,629	83	277	564	5,177	1,271	4,154	1,492
2001	224	323	-		19,370	2,151	663	1,525	2,261	56	233	125	1,503	1,028	2,637	563
2002	190	235	106	3,141	15,589	1,974	714	916	1,435	65	276	487	2,573	1,640	4,861	1,465
2003	108	158	394	3,171	29,198	2,219	722	1,183	2,271	115	402	322	1,953	2,334	3,955	1,406
2004	56	615	454	4,008	27,195	2,726	983	1,520	3,006	70	169	656	3,818	2,828	5,110	1,151
2005	337	858	520	7,007	28,050	3,746	940	1,538	2,417	69	427	216	1,978	2,495	4,342	1,019
2006	484	326	445	4,967	24,924	2,768	741	1,173	2,546	76	352	136	2,623	3,004	4,030	1,300
2007	498	303	240	3,222	21,713	1,850	576	1,050	1,674	37	174	39	1,174	1,394	2,979	793
2008	428	495	474	4,842	31,990	3,998	1,416	2,328	3,586	97	695	71	2,823	3,614	5,886	1,920
2009	280	67	115	1,605	32,560	3,955	1,120	1,868	2,497	49	498	231	1,828	2,208	2,417	1,063
2010	306	173	-	2,225	39,417	3,790	1,480	2,798	4,183	78	941	271	1,762	3,175	4,794	1,782
2011	419	380	348	8,565	34,100	4,860	1,726	2,758	4,786	57	771	86	1,543	3,455	2,667	1,351
2012	423	225	-	3,599	25,113	3,755	1,434	2,708	3,745	24	430	65	1,965	1,930	3,839	1,173
2013	467	79	296	1,646	28,770	4,119	1,612	2,671	3,973	62	212	378	2,710	2,527	1,854	705

Table 4. Continued.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2014	839	182	152	1,835	26,927	4,055	-	2,932	3,413	-	367	48	1,234	3,224	4,244	1,426
Pre-Moratorium Mean	-	-	-	2,765	10,767	-	881	1,169	1,568	99	235	89	6,472	-	2,154	403
Moratorium Mean	310	312	339	4,000	24,601	3,102	1,090	1,850	2,587	71	385	262	2,574	2,115	4,206	1,131
Previous Generation Mean	387	237	308	3,747	31,992	4,096	1,474	2,561	3,837	54	570	206	1,962	2,659	3,114	1,215

(1) English River, (2) Southwest Brook (Paradise River), (3) Muddy Bay Brook, (4) Sand Hill River, (5) Exploits River, (6) Campbellton River, (7) Salmon Brook (Gander River), (8) Middle Brook, (9) Terra Nova River, (10) Northeast Brook, Trepassey, (11) Rocky River, (12) Little River, (13) Conne River, (14) Harry's River, (15) Torrent River, (16) Western Arm Brook

Pre-Moratorium Means: Labrador (1984-1997), Newfoundland (1984-1991)

Moratorium Means: Labrador (1998-2013), Newfoundland (1992-2013)

Previous Generation Means: Labrador (2008-2013), Newfoundland (2009-2013)

Table 5. Total returns of large Atlantic Salmon to rivers in NL 1984–2014.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1984	-	-	-	-	529	-	38	57	107	33	-	-	-	-	288	0
1985	-	-	-	-	183	-	26	27	112	41	-	-	-	-	30	1
1986	-	-	-	-	355	-	12	15	140	30	-	-	412	-	93	0
1987	-	-	-	-	310	-	9	19	56	30	1	3	516	-	68	1
1988	-	-	-	-	147	-	24	14	206	19	6	3	420	-	44	1
1989	-	-	-	-	89	-	24	19	142	18	9	5	320	-	60	0
1990	-	-	-	-	122	-	8	13	144	9	17	15	372	-	82	0
1991	-	-	-	-	99	-	2	14	114	13	16	6	89	-	71	1
1992	-	-	-	-	314	-	101	43	270	10	46	21	159	16	170	8
1993	-	-	-	-	627	145	97	88	472	17	72	11	100	115	224	8
1994	-	-	-	730	916	191	93	91	243	15	19	11	100	128	334	31
1995	-	-	-	560	945	218	125	169	637	12	39	17	110	80	617	33
1996	-	-	-	414	2,057	560	112	161	467	15	45	127	179	126	517	50
1997	-	-	-	-	881	321	119	262	528	9	89	79	185	201	676	55
1998	-	4	-	-	1,959	402	141	196	394	11	130	49	294	191	761	128
1999	48	43	-	-	2,236	493	138	130	344	18	77	49	241	176	421	22
2000	15	-	-	-	684	208	61	190	232	14	104	52	216	49	596	120
2001	41	32	-	-	1,347	119	93	62	330	8	60	36	140	132	443	28
2002	31	34	11	561	890	123	95	69	271	2	78	41	167	285	432	48
2003	19	16	31	627	1,336	152	139	74	330	11	73	13	51	422	341	23
2004	25	54	28	604	949	161	72	88	397	11	235	31	175	498	549	74
2005	28	54	20	875	1,967	276	138	62	316	5	95	15	105	453	780	43
2006	44	35	17	568	3,365	328	102	115	438	5	56	26	170	680	1,431	44
2007	42	32	14	693	3,956	487	62	141	241	3	35	8	49	289	519	17
2008	51	35	36	795	4,577	432	98	143	429	4	56	3	144	414	1,309	15
2009	105	13	10	723	5,579	433	52	85	224	1	34	1	67	371	1,400	21
2010	50	17	*	320	7,060	495	100	115	468	4	30	6	91	452	1,282	47
2011	156	33	19	970	7,724	583	120	195	501	3	39	1	74	569	1,737	75
2012	82	32	*	739	5,578	548	100	173	452	0	30	4	71	318	470	93
2013	160	63	36	1271	4,922	484	90	699	391	3	31	9	91	416	1,621	73
2014	190	38	22	587	2,895	478	-	424	535	-	41	0	56	531	565	35

Table 5. Continued.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Moratorium Mean	-	-	-	568	229	-	18	22	128	24	10	6	355	-	92	1
Moratorium Mean	60	33	22	729	2,721	341	102	152	381	8	67	28	135	290	756	48
Previous Generation Mean	101	32	25	803	6,173	509	92	253	407	2	33	4	79	425	1,302	62

(1) English River, (2) Southwest Brook (Paradise River), (3) Muddy Bay Brook, (4) Sand Hill River, (5) Exploits River, (6) Campbellton River, (7) Salmon Brook (Gander River), (8) Middle Brook, (9) Terra Nova River, (10) Northeast Brook, Trepassey, (11) Rocky River, (12) Little River, (13) Conne River, (14) Harry's River, (15) Torrent River, (16) Western Arm Brook

Pre-Moratorium Means: Labrador (1984-1997), Newfoundland (1984-1991)

Moratorium Means: Labrador (1998-2013), Newfoundland (1992-2013)

Previous Generation Means: Labrador (2008-2013), Newfoundland (2009-2013)

Table 6a. Percentage conservation egg requirement achieved for rivers in Labrador 1992–2014.

River	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
SFA 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
English River	-	-	-	-	-	-	-	40	73	63	52	26	26	80	115	115	109	117	88	176	129	188	275
SFA 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southwest Brook (Paradise River)	-	-	-	-	-	-	39	139	-	110	82	52	201	267	110	102	157	26	57	124	80	57	72
Muddy Bay Brook	-	-	-	-	-	-	-	-	-	-	43	153	173	190	161	90	184	46	-	130	-	125	66
Sand Hill River	-	-	65	70	74	-	-	-	-	-	81	82	101	168	118	89	125	59	54	204	98	82	59

Table 6b. Percentage conservation egg requirement achieved for rivers in Newfoundland 1992–2014.

River	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
SFA 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exploits River	31	43	31	39	69	24	47	44	21	34	25	51	47	49	48	44	60	62	77	70	50	57	50
Lower	101	157	103	121	210	72	134	116	56	91	56	141	130	83	125	150	111	154	175	151	61	106	18
Middle	20	23	18	24	43	15	35	35	16	27	23	39	37	51	40	27	60	53	70	65	56	57	69
Upper	2	6	7	12	26	10	6	7	2	5	3	7	2	4	1	2	5	2	5	3	18	7	9
Campbellton River	-	311	216	264	316	180	315	312	152	148	138	191	212	328	273	208	360	371	386	498	404	399	409
Salmon Brook (Gander River)	121	155	103	151	105	62	142	124	86	94	100	114	145	134	87	72	148	127	171	201	164	184	-
SFA 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle Brook	148	238	176	116	258	193	301	222	217	132	101	134	162	163	133	126	232	172	266	275	303	374	363
Terra Nova River	28	53	25	44	35	31	33	33	27	36	28	42	54	42	47	29	61	40	70	79	64	64	61
SFA 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Northeast Brook, Trepassey	126	193	239	194	196	135	256	248	216	157	156	303	198	173	185	101	212	114	173	137	55	148	-
Rocky River	28	34	25	56	34	56	54	39	34	33	40	50	51	55	42	22	76	54	96	81	45	25	42
SFA 11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Little River	44	80	37	56	288	200	231	38	263	69	224	144	293	99	69	20	31	98	119	37	30	169	21
Conne River	90	110	67	145	206	135	151	122	188	77	110	76	174	92	110	55	117	72	69	61	79	101	49
SFA 13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harry's River	13	41	51	53	46	50	49	49	29	33	60	84	98	89	116	55	119	95	100	112	68	78	137
SFA 14A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Torrent River	313	538	530	1033	1279	797	924	680	657	400	597	496	686	675	844	458	1203	750	1050	867	689	802	714
Western Arm Brook	151	288	292	286	415	200	625	370	567	193	510	466	425	355	446	258	611	341	751	458	405	266	510

Table 7. Atlantic Salmon smolt production in NL rivers 1971–2014.

Year	Sand Hill River (SFA 2)	Campbellton River (SFA 4)	Northeast Brook, Trepassey (SFA 9)	Rocky River (SFA 9)	Conne River (SFA 11)	Western Arm Brook (SFA 14A)
1971	-	-	-	-	-	5,735
1972	-	-	-	-	-	11,905
1973	-	-	-	-	-	8,484
1974	-	-	-	-	-	11,854
1975	-	-	-	-	-	9,600
1976	-	-	-	-	-	6,232
1977	-	-	-	-	-	9,899
1978	-	-	-	-	-	13,071
1979	-	-	-	-	-	8,349
1980	-	-	-	-	-	15,665
1981	-	-	-	-	-	13,981
1982	-	-	-	-	-	12,477
1983	-	-	-	-	-	10,552
1984	-	-	-	-	-	20,653
1985	-	-	-	-	-	13,417
1986	-	-	1,117	-	-	17,719
1987	-	-	1,404	-	74,585	17,029
1988	-	-	1,692	-	65,692	15,321
1989	-	-	1,708	-	73,724	11,407
1990	-	-	1,902	8,287	56,943	10,563
1991	-	-	1,911	7,732	74,645	13,453
1992	-	-	1,674	7,813	68,208	15,405
1993	-	31,577	1,849	5,115	55,765	13,435
1994	-	41,663	944	9,781	60,762	9,283
1995	-	39,715	792	7,577	57,733	15,144
1996	-	58,369	1,749	14,261	94,088	14,502
1997	-	62,050	1,829	16,900	100,983	23,845
1998	-	50,499	1,727	12,163	69,841	17,139
1999	-	47,256	1,419	8,625	63,658	13,500
2000	-	35,596	1,740	7,616	60,777	12,706
2001	-	37,170	916	9,392	86,898	16,013
2002	-	32,630	2,076	10,144	81,806	14,999
2003	-	35,089	1,064	4,440	71,479	12,086
2004	-	32,780	1,571	13,047	79,667	17,323
2005	-	30,123	1,384	15,847	66,196	8,607
2006	-	33,304	1,385	13,200	35,146	20,826
2007	-	35,742	1,777	12,355	63,738	16,621
2008	60,619	40,390	1,868	18,338	68,242	17,444
2009	-	36,705	1,600	14,041	71,085	18,492
2010	-	41,069	1,012	15,098	54,392	19,044
2011	-	37,033	800	9,311	50,701	20,544
2012	82,537	44,193	1,557	5,673	51,220	13,573
2013	-	40,355	520	6,989	66,261	19,710
2014	-	45,630	*	9,901	56,224	19,771
Previous five year mean (2009-2013)	-	39,871	1,098	10,222	58,732	18,273

Table 8. Marine survival of Atlantic Salmon smolt (year-1) to small adult salmon (year) in NL rivers 1972-2014.

Year	Sand Hill River (SFA 2)	Campbellton River (SFA 4)	Northeast Brook, Trepassey (SFA 9)	Rocky River (SFA 9)	Conne River (SFA 11)	Western Arm Brook (SFA 14A)
1972	-	-	-	-	-	7.1
1973	-	-	-	-	-	6.7
1974	-	-	-	-	-	6.0
1975	-	-	-	-	-	5.4
1976	-	-	-	-	-	5.8
1977	-	-	-	-	-	6.0
1978	-	-	-	-	-	3.2
1979	-	-	-	-	-	12.1
1980	-	-	-	-	-	5.6
1981	-	-	-	-	-	3.1
1982	-	-	-	-	-	3.3
1983	-	-	-	-	-	9.1
1984	-	-	-	-	-	2.2
1985	-	-	-	-	-	2.3
1986	-	-	-	-	-	3.9
1987	-	-	8.1	-	-	2.5
1988	-	-	6.9	-	10.2	2.5
1989	-	-	3.7	-	7.6	3.0
1990	-	-	4.2	-	7.3	3.9
1991	-	-	5.2	2.5	4.2	2.2
1992	-	-	2.6	3.1	3.4	3.6
1993	-	-	4.7	3.7	4.0	6.1
1994	-	9.0	5.4	3.1	2.7	7.1
1995	-	7.3	8.5	3.9	5.8	8.9
1996	-	8.1	9.2	4.7	7.2	8.1
1997	-	3.4	2.9	3.1	3.4	3.5
1998	-	5.3	5.0	2.5	2.9	7.2
1999	-	6.1	5.5	2.7	3.4	6.1
2000	-	3.8	5.8	3.2	8.1	11.1
2001	-	6.0	3.2	3.1	2.5	4.4
2002	-	5.3	7.1	2.9	3.0	9.1
2003	-	6.8	5.5	4.0	2.4	9.4
2004	-	7.8	6.6	3.8	5.3	9.5
2005	-	11.4	4.4	3.3	2.5	5.9
2006	-	9.2	5.5	2.2	4.0	15.1
2007	-	5.6	2.7	1.3	3.3	3.8
2008	2.6	11.2	5.5	5.6	4.4	11.6
2009	-	9.8	2.6	2.7	2.7	6.1
2010	-	10.3	4.9	6.7	2.5	9.6
2011	-	11.8	5.6	5.1	2.8	7.1
2012	2.0	10.1	3.0	4.6	3.9	5.7
2013	-	9.3	4.0	3.7	5.3	5.2
2014	-	10.0	*	5.3	1.9	7.2
Previous five year mean (2009-2013)	-	10.3	-	4.6	3.4	6.7

FIGURES

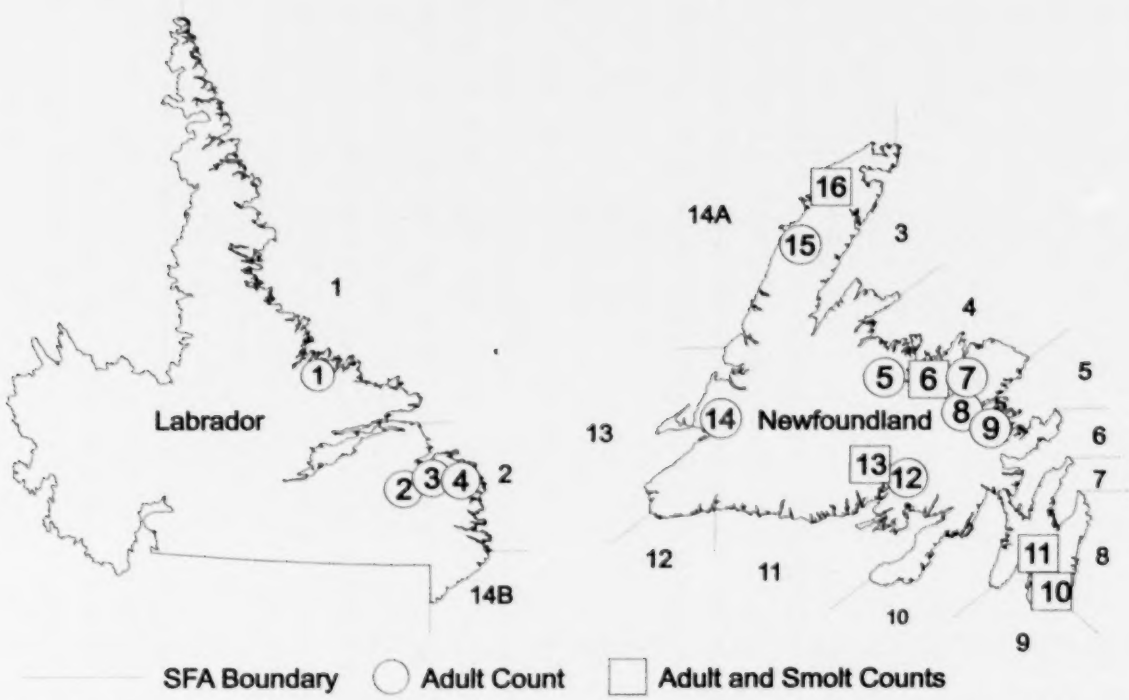
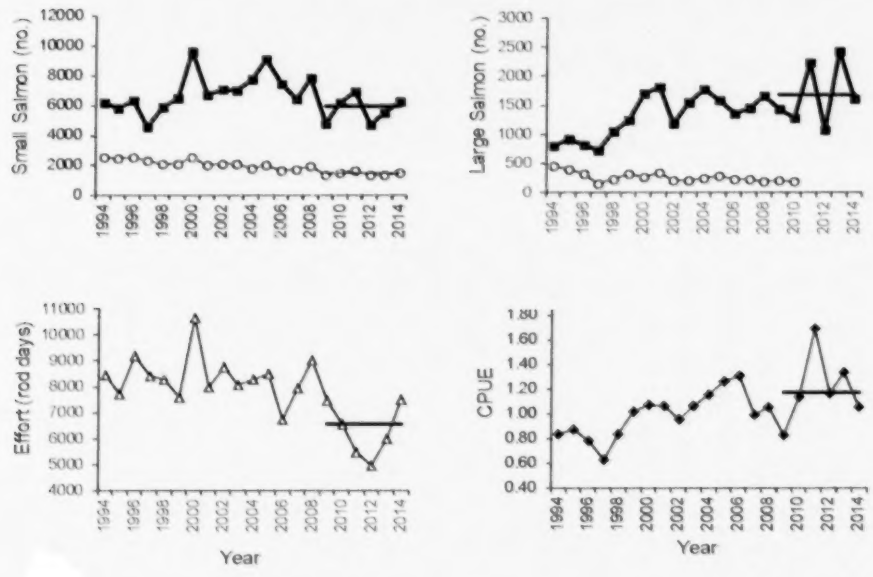


Figure 1. Map showing the locations of rivers in SFAs 1–14B where Atlantic Salmon populations were monitored in 2013 and/or 2014: (1) English River, (2) Southwest Brook, Paradise River, (3) Muddy Bay Brook, (4) Sand Hill River, (5) Exploits River, (6) Campbellton River, (7) Salmon Brook, Gander River, (8) Middle Brook, (9) Terra Nova River, (10) Northeast Brook, Trepassey, (11) Rocky River, (12) Little River, (13) Conne River, (14) Harry's River, (15) Torrent River, and (16) Western Arm Brook.



Figu[illegible]ecreational catch of small and large salmon (open circles – retained salmon, black squares – reta[illegible]d and released salmon), effort, and CPUE, 1994–2014 for Labrador (SFAs 1, 2, 14B). Horizontal lines represent the previous six year mean, 2008–13.

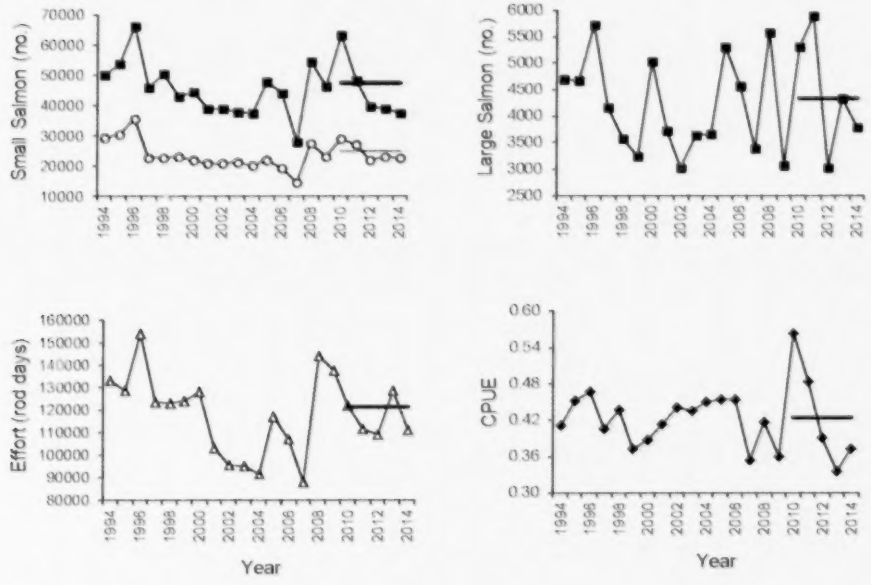


Figure 3. Recreational catch of small and large salmon (open circles – retained salmon, black squares – retained and released salmon), effort, and CPUE, 1994-2014 for Newfoundland (SFAs 3-14A). Horizontal lines represent the previous five-year mean, 2009–13.

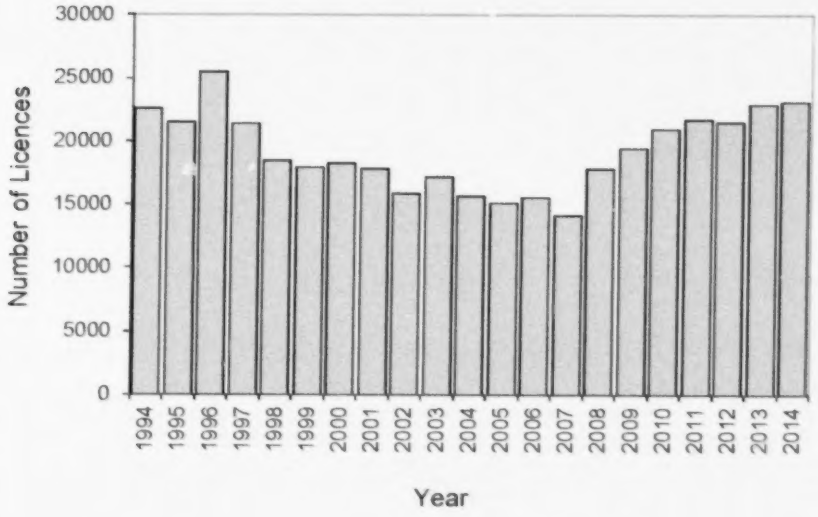


Figure 4. Number of Recreational Atlantic Salmon licences sold in NL (1994-2014).

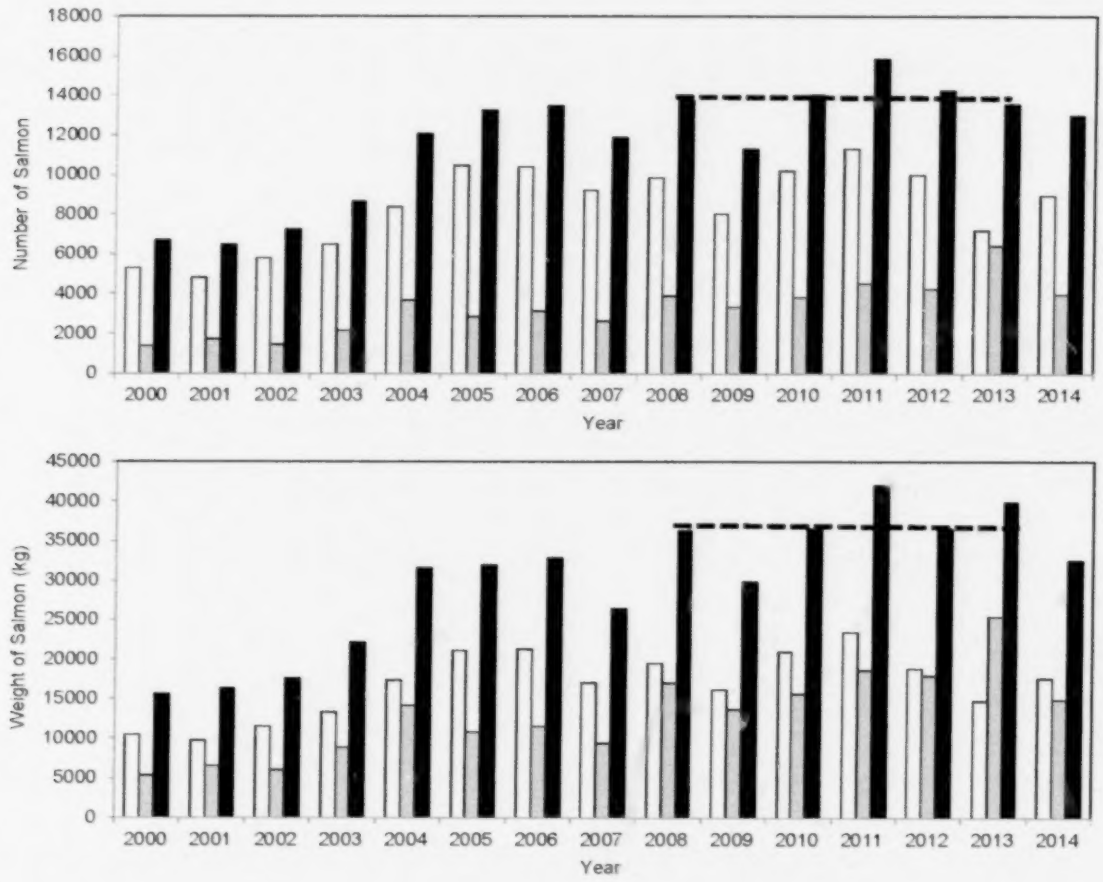


Figure 5. Harvests of small (white bars), large (grey bars), and total (black bars) Atlantic Salmon in the subsistence and FSC Fisheries in Labrador (SFAs 1 and 2), 2000-14. The dashed horizontal line represents the previous six-year mean (2008-13).

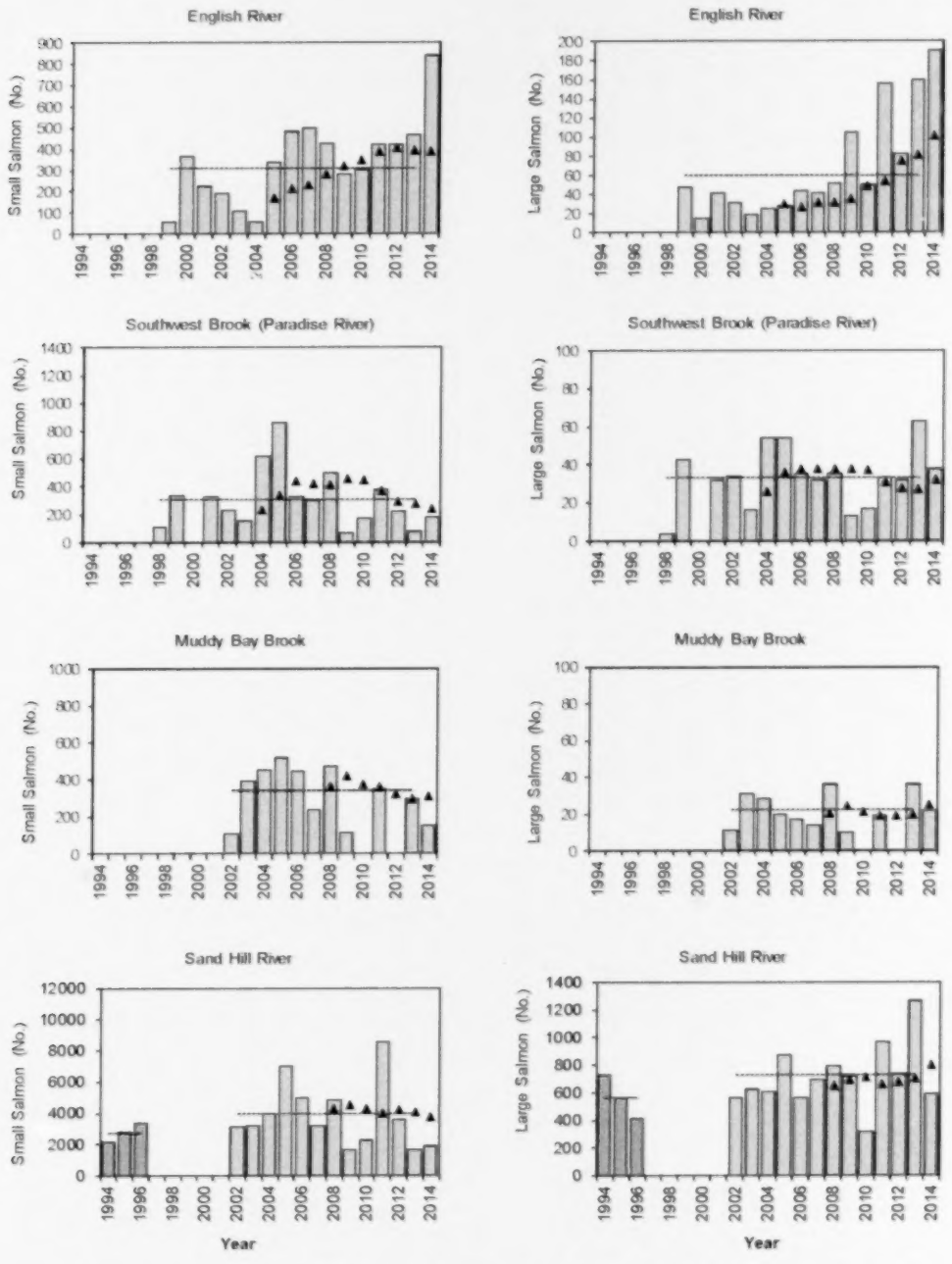


Figure 6. Total returns of small and large salmon to Labrador rivers: English River (SFA 1), Southwest Brook, Paradise River (SFA 2), Muddy Bay Brook (SFA 2) and Sand Hill River (SFA 2). The horizontal solid line represents the pre-moratorium mean 1984-97, the dotted line the moratorium mean 1998-2013 and the triangles the previous six year mean. The dark gray bars are the pre-moratorium years and the lighter gray bars the moratorium years. Note: No data was available for Muddy Bay Brook in 2010 and 2012.

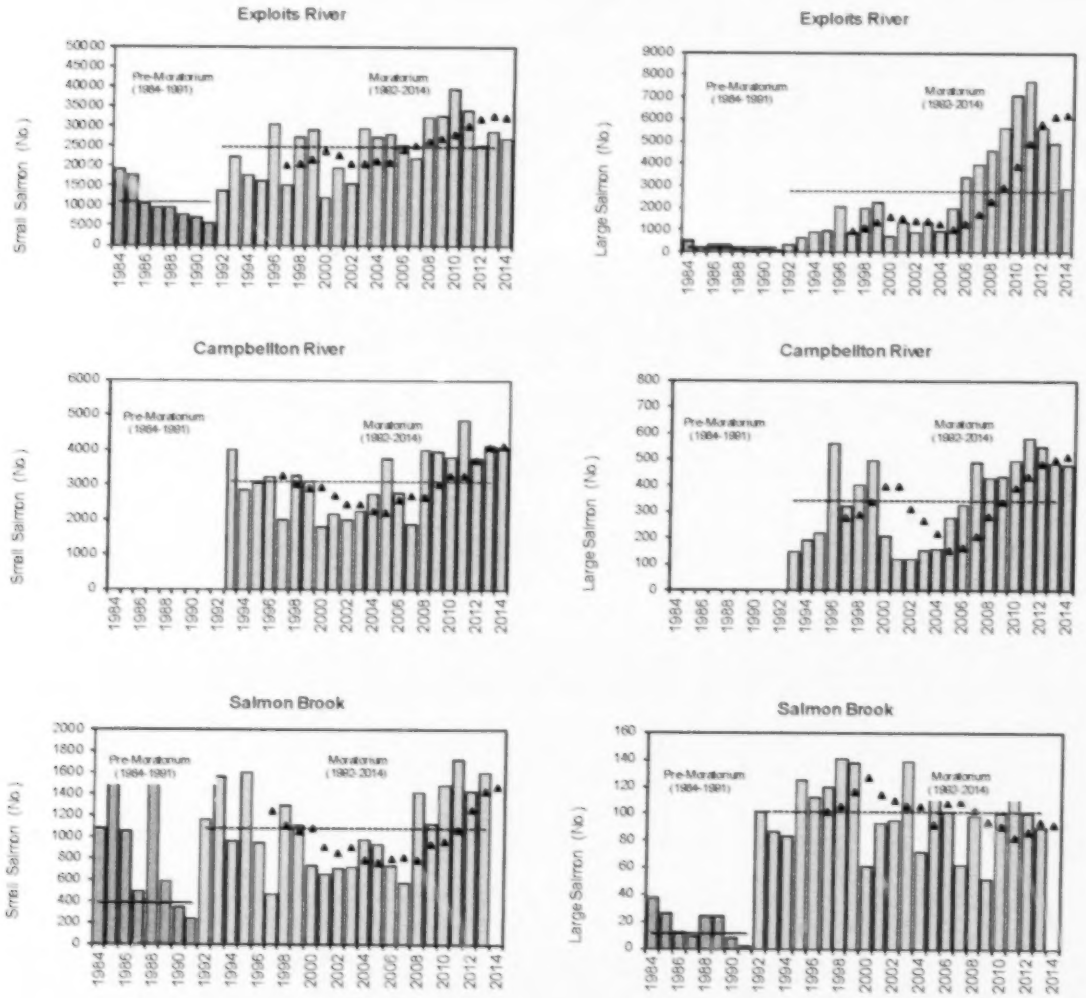


Figure 7. Total returns of small and large salmon to SFA 4 rivers on the northeast coast of Newfoundland: Exploits River, Campbellton River, and Salmon Brook. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line the moratorium mean 1992-2013 and the triangles the previous five year mean. The dark gray bars are the pre-moratorium years and the lighter gray bars the moratorium years. Note: No data was available for Salmon Brook in 2014.

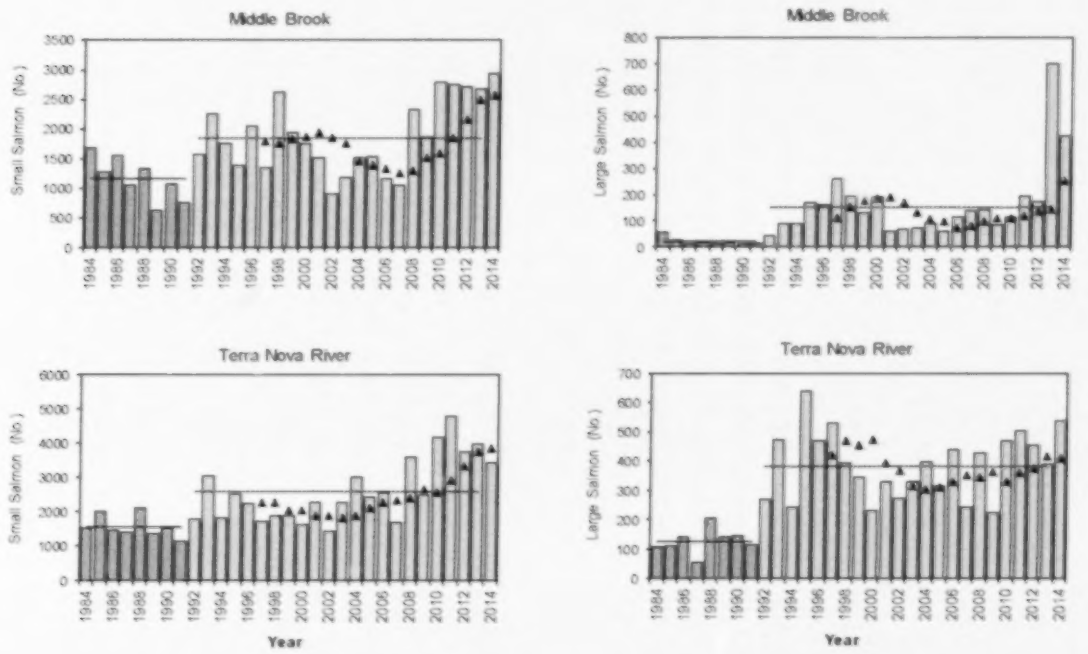


Figure 8. Total returns of small and large salmon to SFA 5 rivers on the northeast coast of Newfoundland: Middle Brook and Terra Nova River. The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line the moratorium mean 1992-2013 and the triangles the previous five year mean. The dark gray bars are the pre-moratorium years and the lighter gray bars the moratorium years.

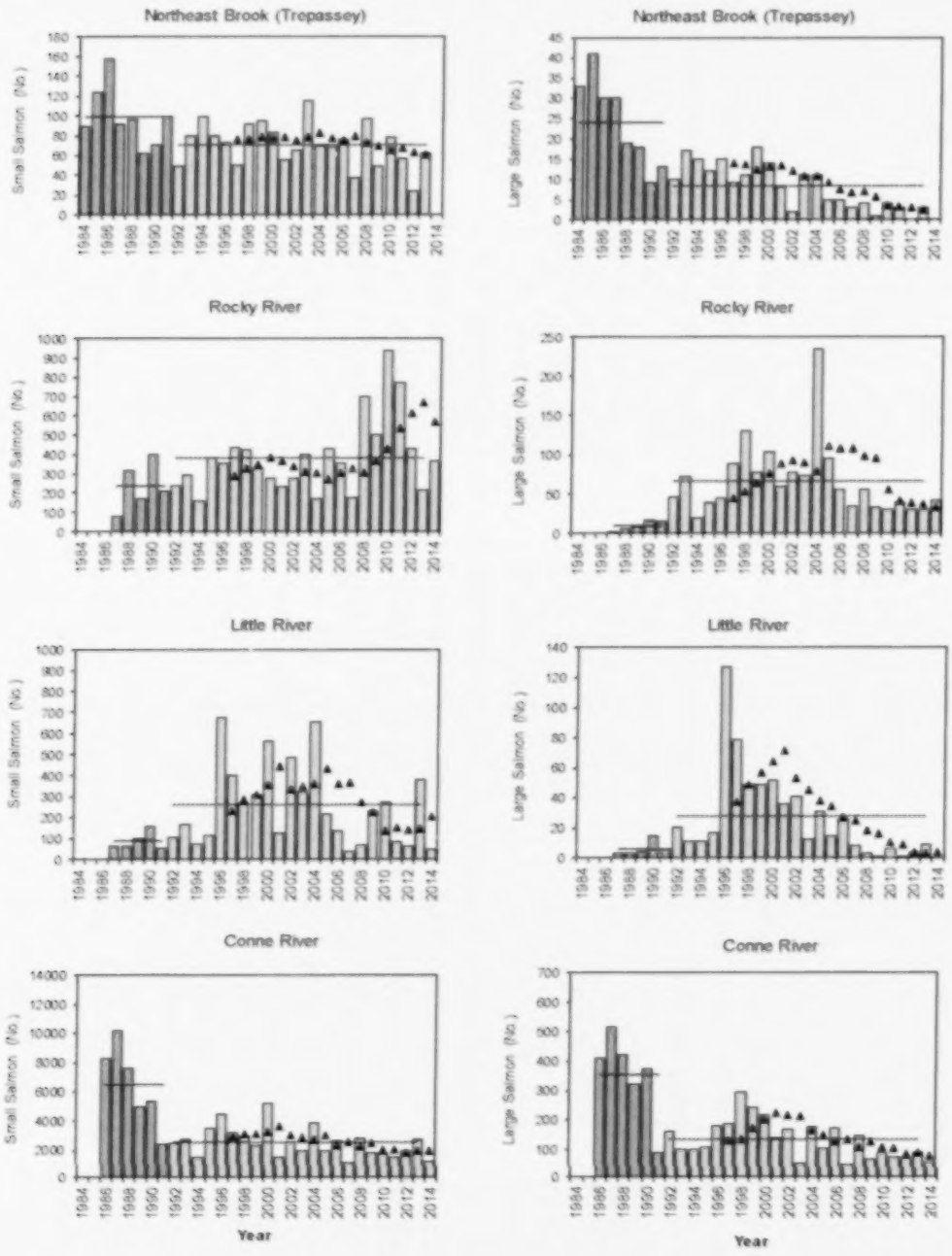


Figure 9. Total returns of small and large salmon to rivers on the south coast of Newfoundland: Rocky River (SFA 9), Little River (SFA 11) and Conne River (SFA 11). The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line the moratorium mean 1992-2013 and the triangles the previous five year mean. The dark gray bars are the pre-moratorium years and the lighter gray bars the moratorium years. Note: No data was available for Northeast Brook (Trepassey) in 2014.

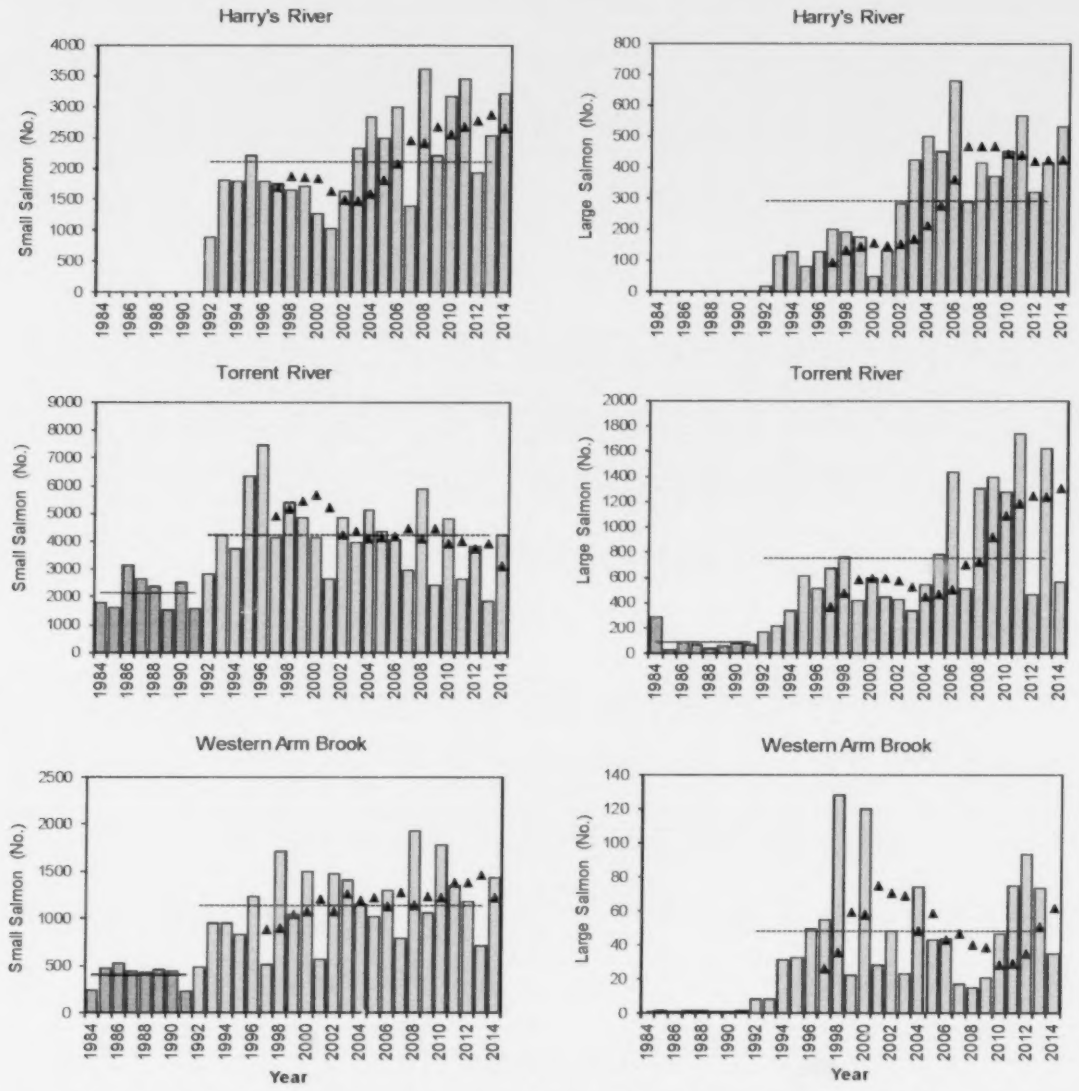


Figure 10. Total returns of small and large salmon to rivers on the west coast of Newfoundland: Harry's River (SFA 13), Torrent River (SFA 14A), and Western Arm Brook (SFA 14A). The horizontal solid line represents the pre-moratorium mean 1984-91, the dotted line the moratorium mean 1992-2013 and the triangles the previous five year mean. The dark gray bars are the pre-moratorium years and the lighter gray bars the moratorium years.

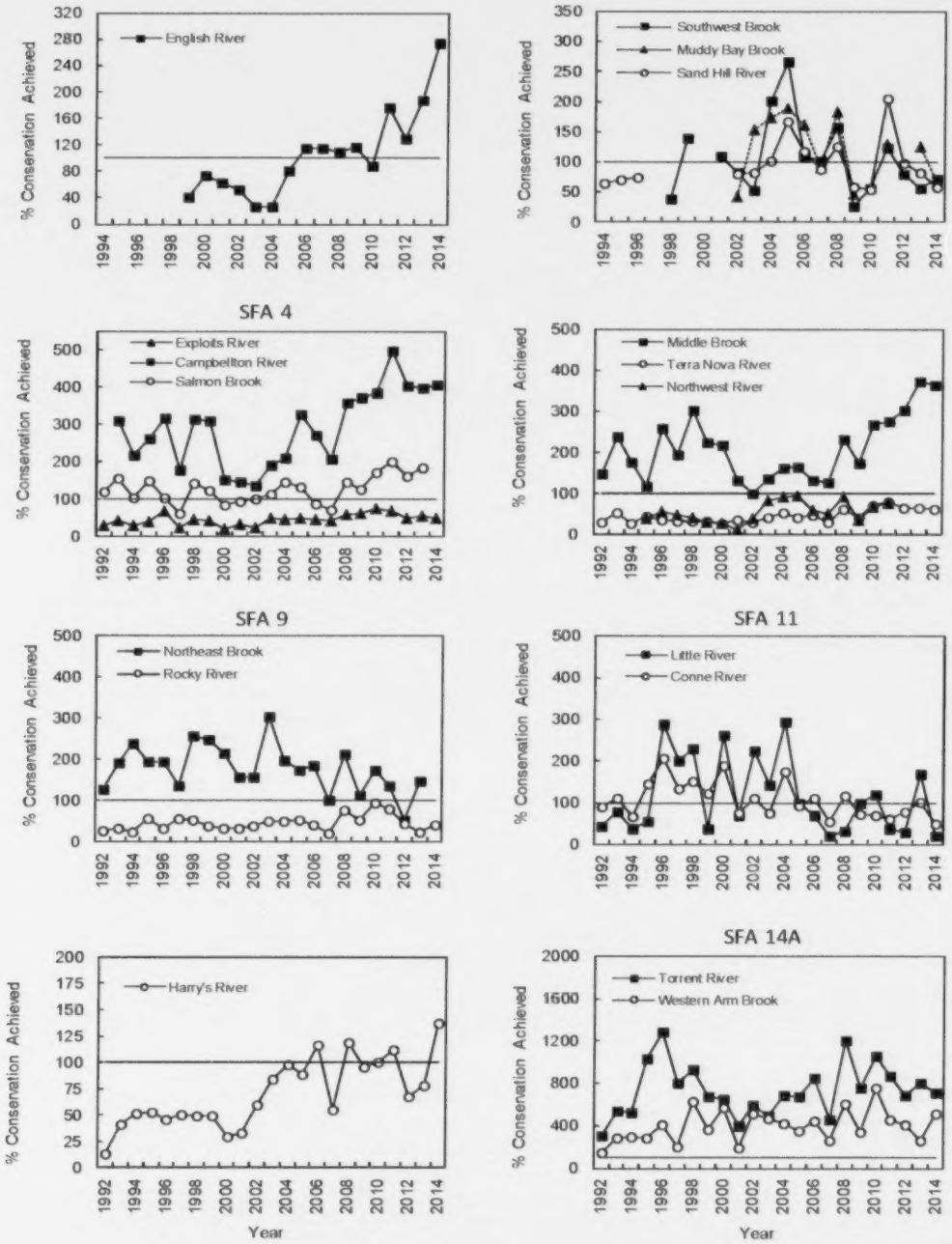


Figure 11. Percent conservation egg requirement achieved for data available from 1984–2014. Horizontal line represents 100% of conservation egg requirement.

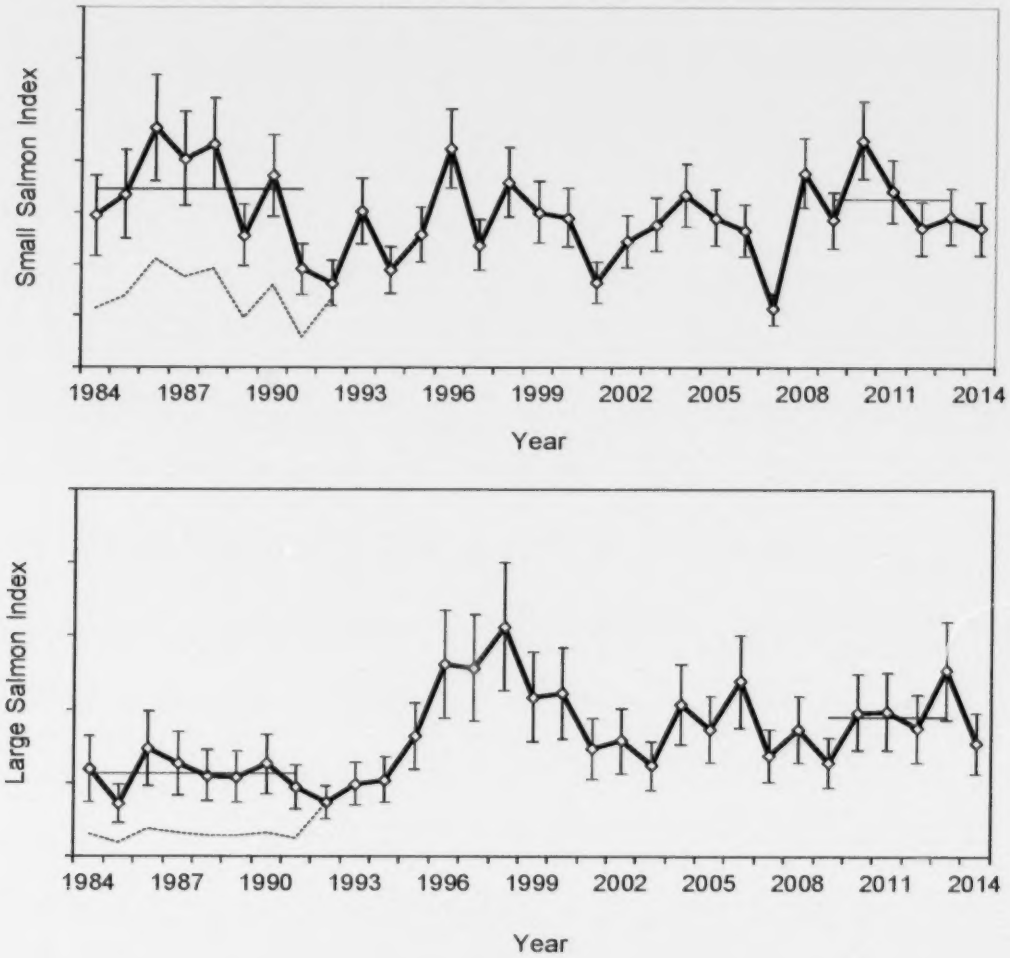


Figure 12. Trends in abundance (± 1 standard error) of small and large Atlantic Salmon for Newfoundland (SFA 3-14A), all rivers combined, from 1984–2014. Horizontal lines represent the pre-moratorium (1984-91) and previous five year (2009-13) means. Dashed lines represent returns unadjusted for marine exploitation for the period 1984-91. (Note: The y-axis represents an abundance index that is related to the geographic mean of individual river abundances and not absolute abundance).

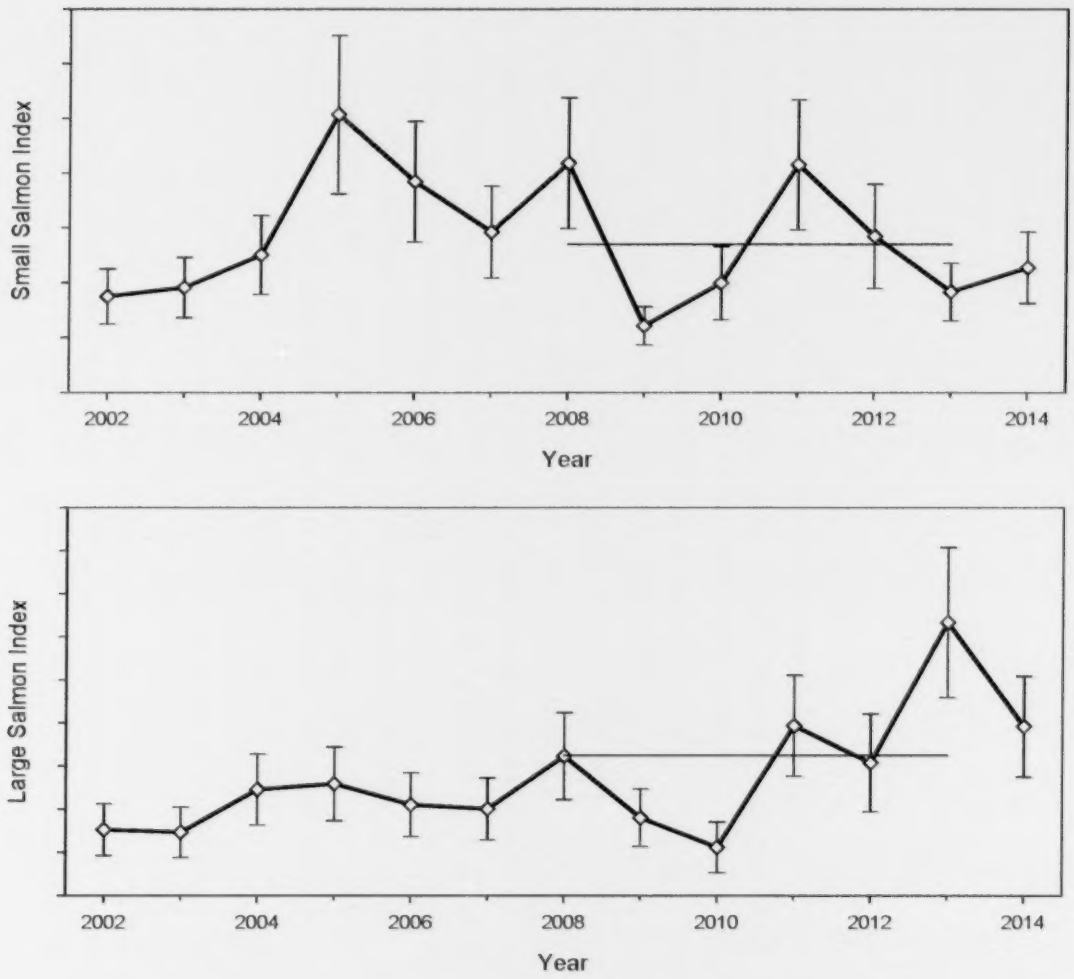


Figure 13. Trends in abundance (± 1 standard error) of small and large Atlantic Salmon for Labrador (SFAs 1, 2 and 14B), all rivers combined, from 2002–14. Horizontal lines represent the previous six year mean. (Note: The y-axis represents an abundance index that is related to the geographic mean of individual river abundances and not absolute abundance).

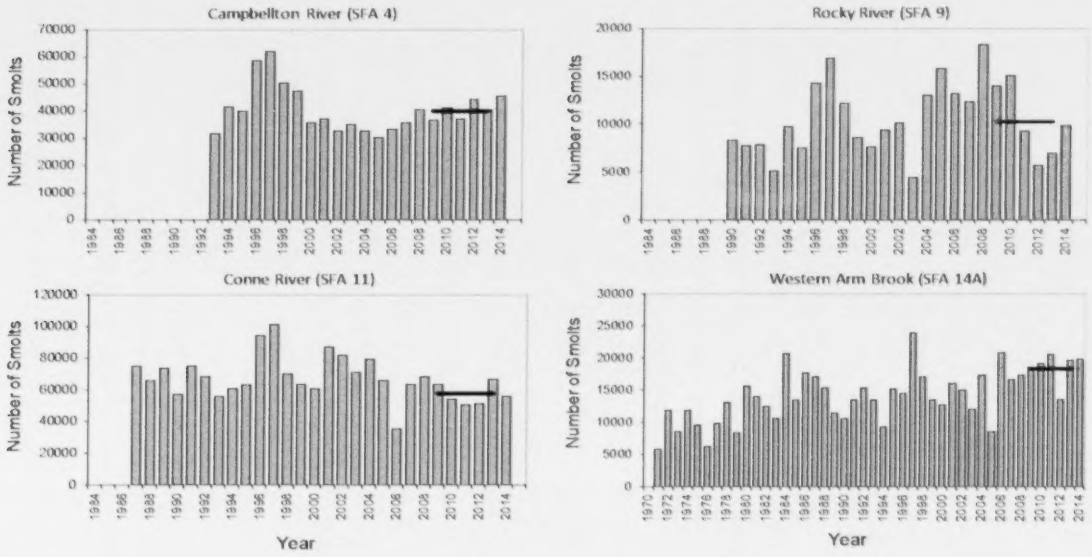


Figure 14. Atlantic Salmon smolt production (bars) of four rivers in Newfoundland. Horizontal black line represents previous five year mean (2009-13).

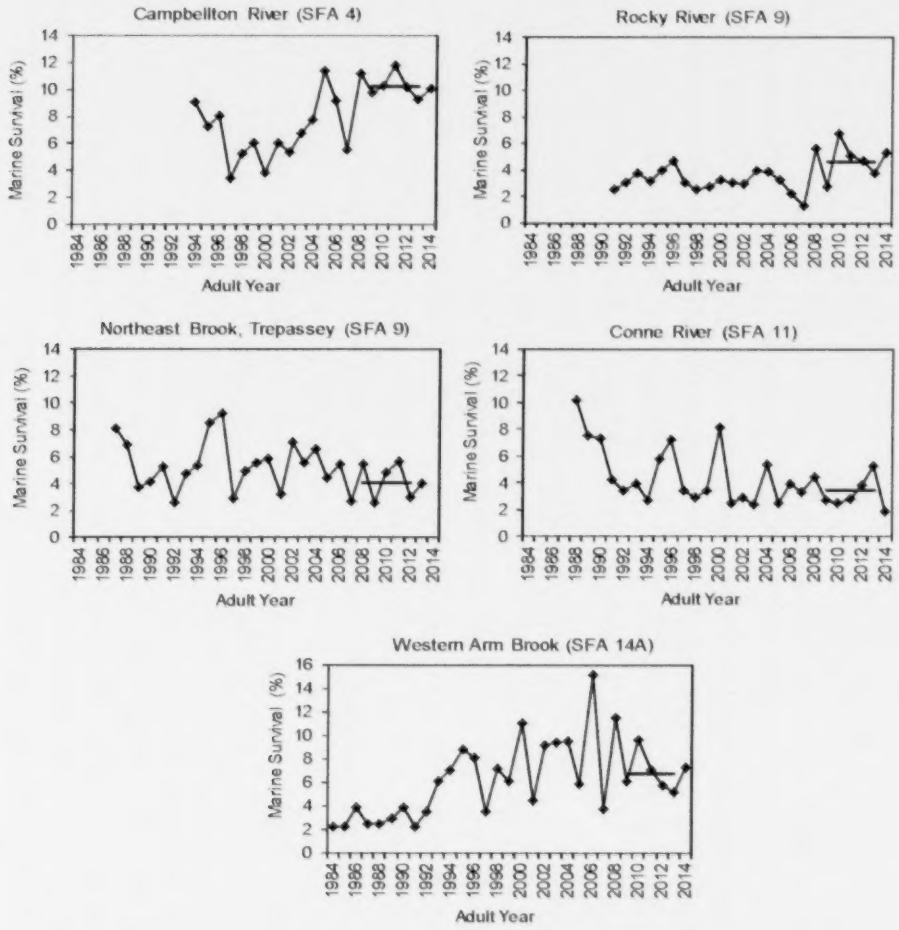


Figure 15. Marine survival of Atlantic Salmon smolt (diamonds) to small adult salmon. Horizontal black line represents previous five-year mean.